a) H–,

b) $(C_1$-$C_4)$alkyl,

c) aryl$(CH_2)_m$,

d) ClH_2C–,

e) Cl_2HC–,

f) FH_2C–,

g) F_2HC–, and

h) $(C_3$-$C_6)$cycloalkyl;

R^{19} is selected from the group consisting of:

a) CH_3,

b) CH_2Cl,

c) $CH_2CH{=}{=}CH_2$,

d) aryl, and

e) CH_2CN;

R^{20} is OH, CH_3O–, or F;

R^{21} is:

a) CH_3–,

b) $HOCH_2$–,

c) aniline, or

d) $(CH_3)_2N$-CH_2–,

R^{22} is selected from the group consisting of:

a) HO-

b) CH_3O-

c) H_2N-

d) $CH_3OC(O)O$–,

e) $CH_3C(O)OCH_2C(O)O$–,

f) aryl-$CH_2OCH_2C(O)O$–,

g) $HO(CH_2)_2O$–,

h) $CH_3OCH_2O(CH_2)_2O$–, and

i) CH_3OCH_2O–;

m is 0 or 1;

n is 1-3;

p is 0-2; and

aryl is unsubstituted phenyl or phenyl unsubstituted with one of the following:

a) F,

b) Cl,

c) OCH_3,

d) OH,

e) NH_2,

f) $(C_1$-$C_4)$alkyl,

g) $OC(O)OCH_3$, or

h) NO_2;

and protected forms thereof.

Specific substituted Q^1 groups include, but are not limited to, 4-(benzyloxycarbonyl)-1-piperazinyl, 4-morpholinyl, and 4-hydroxyacetylpiperazinyl. Especially preferred R^1 groups include 3-fluoro-4-[4-(benzyloxycarbonyl)-1-piperazinyl]phenyl, 3-fluoro-4-(4-morpholinyl)phenyl, 4-(1,1-dioxohexahydro-1λ^6-thiopyran-4-yl)-3-fluorophenyl, 3-fluoro-4-tetrahydro-2H-thiopyran-4-ylphenyl, 3,5-difluoro-4-(4-thiomorpholinyl)phenyl, 3-fluoro-4-(3-thietanyl)phenyl, and 4-(1,1-dioxido-3-thietanyl)-3-fluorophenyl.

R^2 is selected from the group consisting of C_1-C_{20} alkyl, C_3-C_7 cycloalkyl, aryl optionally substituted with one or two C_1-C_3alkyl or halogen groups, allyl, 3-methylallyl, 3,3-dimethylallyl, vinyl, styrylmethyl, benzyl optionally substituted on the phenyl with one or two Cl, C_1-C_4 alkyl, nitro, cyano, or trifluoromethyl groups, 9-fluorenylmethyl, trichloromethylmethyl, 2-trimethylsilylethyl, phenylethyl, 1-adamantyl, diphenylmethyl, 1,1-dimethylpropargyl, 2-furanylmethyl, isobornyl, and hydrogen. Preferably, R^2 is methyl. R^3 is C_1-C_{10} alkyl, and, preferably, R^3 is C_4-C_7 tertiary alkyl.

The carbamate (I) and S-epoxide (II) are reacted in the presence of a base and a solvent. The identity of the base is not critical as long as the base is capable of deprotonating carbamate (I), i.e., a base whose conjugate acid has a pKa of greater than about 8. A preferred base is selected from the group consisting of an

alkoxy group having one through seven carbon atoms; a carbonate; a methyl, sec-butyl or t-butyl carbanion; tri(alkyl)amine, wherein the alkyl group contains 1 through 5 carbon atoms; a conjugate base of carbamate (II); 1,8-diazabicyclo[5.4.0]undec-7-ene (DBU); 1,5-diazabicyclo[4.3.0]non-5-ene (DBN); N-methylpiperidine; N-methylmorpholine; and, 2,2,2-trichloroethoxide. The most preferred base is an alkoxy group having four or five carbon atoms, particularly t-amylate or t-butoxide. Sodium or potassium bases in combination with a lithium salt (such as, lithium chloride or lithium bromide) can be used to form the lithium cation and base *in situ*.

The identity of the solvent also is not critical, and includes, for example, cyclic ethers such as tetrahydrofuran (THF), amides such as dimethylformamide (DMF) and dimethylacetamide (DMAC), amines such as triethylamine, acetonitrile, and alcohols such as t-amyl alcohol and t-butyl alcohol. The choice of solvent is related to the solubility of carbamate (I) and the S-epoxide (II), and can be determined easily by those skilled in the art.

Another embodiment of the present invention is set forth in Scheme 2,

Scheme 2